

Notice of Allowability

Application No.

09/973,781

Examiner

Oanh L. Duong

Applicant(s)

BUNN ET AL.

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11/23/04.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☒ The drawings filed on 09/26/2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

INTERVIEW SUMMARY

1. Applicant's representative authorized examiner to incorporate the limitation "the mixed protocol burst comprising a plurality of data packets having headers suppressed in accordance with a corresponding plurality of header suppression techniques" to independent claims 1, 9 and 15 in order to place the application in condition for allowance.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

The invention as claimed, claims 1, 9 and 15 specifically include a limitation based on concatenating each data packet within a *single Data Over Cable Service Interface Specification (DOCSIS) transmit burst* to form a mixed protocol burst wherein the mixed protocol burst comprising a *plurality of data packets having headers suppressed in accordance with a corresponding plurality of header suppression techniques* (as defined in the specification, page 24 paragraph 0101). While system and methods for suppressing and expanding data packet headers is firmly documented by the cited prior art, the concatenating each data packet within a *single DOCSIS transmit burst* to form a mixed protocol wherein the mixed protocol burst comprising a plurality of data packets having headers suppressed in accordance with a corresponding plurality of header suppression techniques limitations are novel and the invention is patentable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Thomas C. Fiala (Registration No. 43,610) on May 11, 2005.

The application has been amended as follows:

The claims of the invention is amended as follows:

Claim 1. (Currently amended) A method for dynamically mixing header suppression techniques for transmitting data over a Data Over Cable Service Interface Specification (DOCSIS) network, comprising the steps of:

(a) communicating a plurality of header suppression techniques and a unique index number assigned to each of the plurality of header suppression techniques to a cable modem termination system;

(b) receiving a plurality of data packets to be transmitted;

(c) identifying which of the received data packets have a header that should be suppressed;

(d) selecting a header suppression technique from the plurality of header suppression techniques for each of the identified data packets;

(e) appending a packet header element to each of the identified data packets, the packet header element containing the index number assigned to the header suppression technique selected for each of the identified data packets; and

(f) suppressing a header of each of the identified data packets using the header suppression technique selected for each of the identified data packets; and

(g) concatenating each data packet within a single DOCSIS transmit burst to form a mixed protocol burst, the mixed protocol burst comprising a plurality of data packets having headers suppressed in accordance with a corresponding plurality of header suppression techniques.

Claim 9. (Currently amended) A method for expanding data packet headers transmitted over a Data Over Cable Service Interface Specification (DOCSIS) network, comprising the steps of:

(a) receiving a mixed protocol burst comprising a plurality of data packets having headers suppressed in accordance with a corresponding plurality of header suppression

techniques, the data packets being concatenated within a single DOCSIS transmit burst;

(b) identifying each data packet within the mixed protocol burst that has a suppressed header;

(c) searching a lookup table to select a set of rules from a plurality of sets of rules for expanding a suppressed header of each of the data packets identified in step (b); and

(d) expanding a suppressed header of each of the data packets identified in step (b) according to a set of rules selected in step (c).

Claim 15. (Currently amended) A system for dynamically mixing header suppression techniques transmitted over a Data Over Cable Service Interface Specification (DOCSIS) network, comprising:

one or more cable modems that suppress data packet headers by selectively using one of a plurality of header suppression techniques wherein said one or more cable modems concatenates each data packet having a suppressed header into a single DOCSIS transmit burst to form a mixed protocol burst, the mixed protocol burst comprising a plurality of data packets having headers suppressed in accordance with a corresponding plurality of header suppression techniques; and

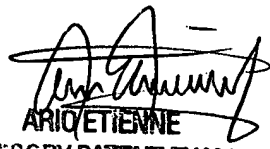
a cable modem termination system (CMTS) enabled to expand said data packet headers by using a set of expansion rules corresponding to said selected one of said plurality of header suppression techniques, wherein said one or more cable modems assigns a unique index number to each one of said plurality of header suppression techniques.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Oanh Duong whose telephone number is (571) 272-3983. The examiner can normally be reached on Monday- Friday, 8:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

O.D
May 12, 2005


ARIO ETIENNE
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 2100